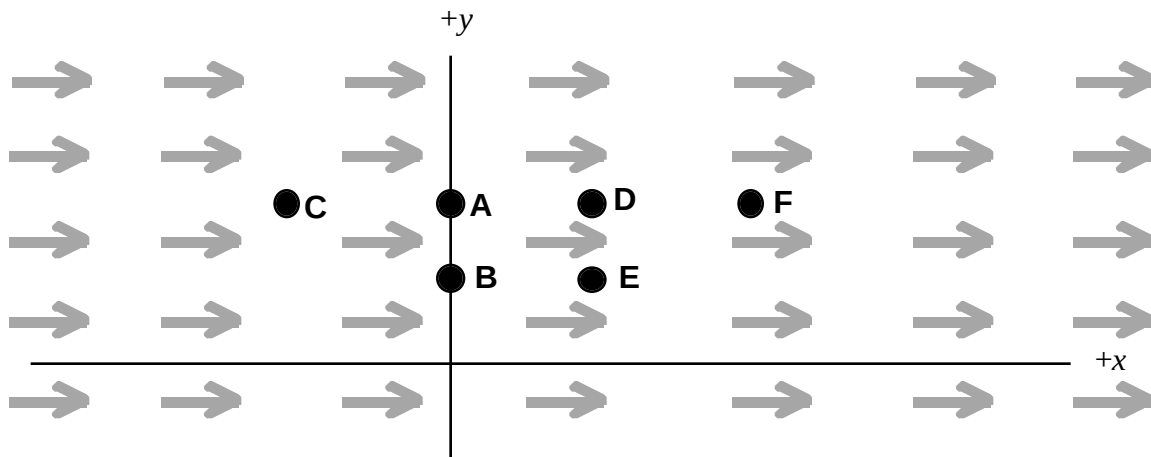


Uniform Electric Field—Electric Force on Various Charges at Rest ¹⁴²

We have a large region of space that has a uniform electric field in the $+x$ direction ($\Rightarrow$) as indicated by the arrows in the diagram below. At the point $(0,0)$ m, the electric field is 30 i N/C and the electric potential is 100 volts.

Rank from greatest to least the strength (magnitude) of the electric force on the charges listed when placed at rest at the points specified below. Each charge is placed at its specified point separately.

A: $(0, 6) \text{ m}$ **B:** $(0, 3) \text{ m}$ **C:** $(-3, 6) \text{ m}$ **D:** $(3, 6) \text{ m}$ **E:** $(3, 3) \text{ m}$ **F:** $(6, 6) \text{ m}$
 $q = +2 \text{ C}$ $q = +2 \text{ C}$ $q = +2 \text{ C}$ $q = +4 \text{ C}$ $q = +4 \text{ C}$ $q = +2 \text{ C}$



Greatest 1_____ 2_____ 3_____ 4_____ 5_____ 6_____ Least

Or, all of the charges have the same strength electric force acting on them. _____

Or, none of these charges would experience a force. _____

Please carefully explain your reasoning.

How sure were you of your ranking? (circle one)

Basically Guessed

Sure

Very Sure

1 2 3 4 5 6 7 8 9 10

¹⁴² C. Hieggelke